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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,135	08/15/2005	Josette Masle	2251/73607/JPW/MJW	3638
23432	7590	11/14/2006	EXAMINER	
COOPER & DUNHAM, LLP			KUMAR, VINOD	
1185 AVENUE OF THE AMERICAS				
NEW YORK, NY 10036			ART UNIT	PAPER NUMBER
			1638	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/519,135	MASLE ET AL.	
	Examiner	Art Unit	
	Vinod Kumar	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 18 August 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-25 is/are pending in the application.
 4a) Of the above claim(s) 1-11 and 20-25 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 12-19 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 22 December 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/22/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restriction

1. Applicant's election with traverse of Group IV, claims 12-19 and the nucleotide sequences set forth in SEQ ID NOs: 1 and 2 in the paper filed on August 18, 2006 is acknowledged.

Applicants argue that there would not be a serious burden on the Examiner if restriction were not required, because a search of the prior art relevant to alleged Group IV would not necessarily pose a serious burden once the prior art for alleged Groups I to III and V to VII has been identified (response, last paragraph bridging the pages 5 and 6).

Applicant's arguments have been fully considered but they were not found persuasive. Applicants are reminded that instant Application is a National Stage Application filed under 35 U.S.C. 371, and restriction practice is based on using unity of invention. See 37 CFR 1.475. This application contains inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. The technical feature linking the inventions of Groups I-VII is a ERECTA gene capable of determining or modulating transpiration efficiency. This technical feature does not constitute a special technical, as it does not have contribution over the prior art teachings of Hainey et al. Accordingly, inventions of Groups I-VII are not so linked by the same or a corresponding special technical feature as to form a single general inventive concept.

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Furthermore, Groups I-V are patentably distinct as they encompass claims with different method steps. Likewise, plants of Group VI can be produced by a method not involving the method steps of claims of Groups I-V. The product of Group VI can be obtained by isolating transgenic plant cell expressing ERECTA gene and regenerating into a plant. Furthermore, inventions of Groups I-VI are patentably distinct from the invention of Group VII because ERECTA gene of Group VII can be used in a materially different process of using that product, such as hybridization method. Additionally, the art search for the inventions of Groups I-VII are not coextensive. Accordingly, claims 1-11 and 20-25 and SEQ ID NOs: 3-45 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. Non-elected subject matter must be removed from the elected claims. This restriction is made FINAL.

Applicants are reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy of Application No. Australia PS 3339 filed on 07/02/2002 has been received.

Information Disclosure Statement

3. An Initialed and dated copy of Applicant's IDS form 1449 filed on 12/22/2004 is attached to the instant Office action. Reference pertaining to "PCT International Search Report" is crossed out because a complete bibliographic information of the citation is missing.

Specification

The disclosure is objected to because of the following informalities:

4. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. See for example, page 42, line 27; page 43, lines 4, 7, 10; page 78, line 18. Applicants are required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.
5. Page 4, line 26, delete extra spaces between "transpiration." and "Typical".
6. Description of drawings do not have SEQ ID listed with the sequences. For example, the sequence in Figure 13 must be referred to by their sequence identifiers as required by 37 CFR 1.821. Likewise, description to Figure 14 (page 31, lines 14-16) have amino acid sequences which are not identified by sequence identifiers as required by 37 CFR 1.821. Any sequence that appears in the specification must be identified by its SEQ ID Number and further listed in sequence listing. If the sequences appearing in the specification do not have sequence ID numbers assigned to them, then an amendment to the sequence listing will be required as well. There must not be any new matter submitted, therefore it is important to be careful to include only the sequences

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that are already disclosed in the current specification. Failure to correct the deficiency will be held a non-responsive to this Office action.

Appropriate corrections are required.

Drawings

The drawings are objected to because of the following informalities:

7. Drawings are objected to because they fail to comply with 37CFR 1.83.

In Figures 1a-1c, labels for genotypes on X-axis are invisible as they are buried within the graph bars.

In Figures 1b-1c, labels such as "Stomatal conductance Run 11-Dec.2001" in Figure 1b and "Transpiration efficiency from gas exchange measurements Run 11-Dec.2001" in Figure 1c must be deleted.

In Figures 3-5, X-axis and Y-axis must be identified by labels. Text numbers on Y-axis are too close. Also in Figure 5, number "2" appearing at the bottom of figure must be deleted.

In Figure 11, label "Run 22-June 03" is unnecessary and must be deleted along with the rectangular box that encloses the label.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Appropriate corrections are required.

Claim Objections

8. Claims 13, 15, 16 and 19 are objected to because of the following informalities:

Claim 13 is directed to non-elected invention(s).

In claims 15-16, line 4, replace "to" after "introduced" and before "the" with --into--

In claim 19, line 3, replace "an" after "of" and before "ERECTA" with --the--.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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9. Claims 12-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite claim 12, is incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 12 is missing the essential step of expressing the ERECTA gene or an allelic variant thereof. The last step only results in a plant comprising the ERECTA gene or an allelic variant thereof. Claims 13-16, 18 and 19 also do not recite expression step.

Claims 12-13 and 15-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite in their recitation "gene" which is confusing since the limitation "gene" implies that the structure comprises the coding sequence and the associated promoter, terminator and enhancer encoding regions are also a part of the structure (see The Federal Register, Vol. 66, No. 4, Friday, January 5, 2001 at page 1108, left column, Endnote 13). In the instant case, Applicants do not appear to describe such ERECTA gene associated nucleic acid sequences. It is suggested that "gene" be amended to "coding sequence". All subsequent recitations of "gene" are also rejected.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in its recitation "different transpiration efficiency" which is confusing since it is unclear whether "transpiration efficiency" is increased or decreased. In which way the "transpiration efficiency" is different? It is unclear what is intended?

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Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in its recitation "near-isogenic", which is confusing since it is unclear what is encompassed and what is not encompassed by the recitation. The metes and bounds of the recitation are unclear as it is not defined.

Claims 12-13 and 15-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite in its recitation "allelic variant", which is confusing since it is unclear how an allele is different from "allelic variant". What kind of variation is being referred to? It is unclear what is encompassed by "allelic variant" and what is not. It is unclear what is intended?

Appropriate corrections/clarifications are required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 12-19 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of increasing the transpiration efficiency of a plant comprising introducing and expression of a nucleotide sequence encoding the ERECTA protein of SEQ ID NO: 2 in said plant, does not reasonably provide enablement for a) nucleotide sequence which is not identical in sequence to SEQ ID NO: 1, b) a nucleotide sequence encoding a protein which is not identical in sequence

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to SEQ ID NO: 2, c) any ERECTA gene or an allelic variant thereof. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

The claims are broadly drawn to a method of modulating the transpiration efficiency of a plant comprising introducing an isolated ERECTA gene or an allelic variant thereof or the protein coding region thereof into a plant and selecting a plant having a different transpiration efficiency compared to a near-isogenic plant that does not comprise the introduced ERECTA gene or allelic variant or protein-encoding region, or wherein the introduction is through introgression.

Specification teaches isolation of a nucleotide sequence (SEQ ID NO: 1) encoding ERECTA protein (SEQ ID NO: 2) of *Arabidopsis*. The specification further teaches functional complementation of an *Arabidopsis* mutant comprising a defective ERECTA gene by transforming said mutant plant with a plant transformation vector comprising SEQ ID NO: 1. Normal transpiration efficiency was restored in the transformed plants. See pages 74-77, example 8.

Claim 13 is directed to an ERECTA gene or an allelic variant thereof comprising a nucleotide sequence which has at least about 55% sequence identity to SEQ ID NO: 1 or encodes a protein which has at least 55% sequence identity to SEQ ID NO: 2. The specification provides guidance on a method of using a nucleotide sequence encoding ERECTA protein of SEQ ID NO: 2 to produce a transformed plant with increased transpiration efficiency. The specification provides no guidance on a method of increasing transpiration efficiency (method of using) in a plant using a nucleotide sequence which is at least about 55% identical in sequence to SEQ ID NO: 1 or a

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nucleotide sequence encoding a protein which has at least about 55% sequence identity to SEQ ID NO: 2. Furthermore, the specification does not provide any guidance on functional domains of SEQ ID NO: 1 or SEQ ID NO: 2 encoded by SEQ ID NO: 1 that are necessary components for obtaining increased transpiration efficiency when expressed in a plant. Neither the state of art at the time the invention was made nor Applicants provided guidance as to which region(s) of SEQ ID NO. 2 should be conserved and which region(s) would tolerate deletion, substitution or addition of one or more amino acids without abrogating the functional activity of the protein.

Keskin et al. (Protein Science, 13:1043-1055, 2004) teach that proteins with similar structure may have different functions. Besides, Thornton et al. (Nature structural Biology, structural genomics supplement, November 2000) teach that structural data may carry information about the biochemical function of the protein. Its biological role in the cell or organism is much more complex and actual experimentation is needed to elucidate actual biological function under *in vivo* conditions. Furthermore, Guo et al. (PNAS, 101: 9205-9210, 2004) teach that there is a probability factor of 34% that a random amino acid replacement in a given protein will lead to its functional inactivation. In the instant case, such a probability factor will be much higher as 55% sequence identity to SEQ ID NOs: 1 would encompass more than a single amino acid changes of the encoded polypeptide. Likewise, probability factor will be much higher as 55% sequence identity to SEQ ID NOs: 2 would encompass more than single amino acid changes of SEQ ID NO: 2. Thus it would have been highly unpredictable that a nucleotide sequence encoding a polypeptide that is not well characterized for its functional domains can be used in a method to produce increased transpiration

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efficiency when expressed in a plant. Undue experimentation would have been required by one skilled in the art to determine how to use such nucleotide sequence which encodes a polypeptide having less than 100% sequence identity with SEQ ID NO: 2 in a method of increasing transpiration efficiency when introduced and expressed in a plant. Neither the state of art nor Applicant provided guidance as to how inoperable embodiments can be readily eliminated other than random trial and error. See Genentech, Inc. v. Novo Nordisk, A/S, USPQ2d 1001, 1005 (Fed. Cir. 1997), which teaches that "the specification, not the knowledge of one skilled in the art" must supply the enabling aspects of the invention.

Claim 12 is directed to a method of increasing the transpiration efficiency of a plant using any ERECTA gene or an allelic variant of ERECTA gene. While the specification teaches a nucleotide sequences encoding SEQ ID NO: 2, it does not enable all nucleotide sequences encoding other ERECTA gene coding sequence. Undue experimentation by one skilled in art would have been required to isolate other ERECTA gene coding sequences or allelic variant thereof from other sources. See In re Bell, 26 USPQ2d 1529, 1532 (Fed. Cir. 1993) and In re Deuel, 34 UPSQ2d, 1210 (Fed. Cir. 1995), which teach that the mere existence of a protein does not enable claims drawn to a nucleic acid encoding that protein. See also Amgen Inc. v. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016 at page 1027, where it is taught that the disclosure of a few gene sequences did not enable claims broadly drawn to any analog thereof.

Claim 13 is directed to a method of decreasing the transpiration efficiency of a plant using SEQ ID NO: 1 encoding SEQ ID NO: 2. The specification provides

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guidance on using a nucleotide sequence encoding ERECTA protein of SEQ ID NO: 2 in a method of increasing transformation efficiency in a plant transformed with said nucleotide sequence. The specification does not provide guidance on a method of decreasing the transpiration efficiency in a plant comprising introducing and expressing SEQ ID NO: 1 encoding SEQ ID NO: 2 in said plant. Undue experimentation would have been required by a skilled artisan to determine how expression of SEQ ID NO: 1 encoding SEQ ID NO: 2 in a plant would decrease transpiration efficiency in said plant.

Claim 12 is directed to a method of decreasing transpiration efficiency in a plant comprising introducing any ERECTA gene or any allelic variant thereof. Specification provides guidance on using antisense inhibition expression or the expression of inhibitory interfering RNA (RNAi) that targets ERECTA gene expression at the RNA level. Antisense suppression of gene expression is highly unpredictable, and the prior art suggests that success depends on the % identity between the sequence of the antisense construct and the target gene sequence (see Elomaa et al. (1996) Molecular Breeding, Vol. 2, pp. 41-50; paragraph bridging pages 47-48, in particular). In the prior art, Klee et al. teach that antisense genes would probably be species-specific, and therefore a different antisense gene would be required for each species of plant desired to be transformed (see US Patent # 5,702,933, issued Dec. 30, 1997, column 1 lines 60-65, in particular). Undue experimentation would have been required by a skilled artisan to determine how to use any ERCTA gene or any allelic variant thereof in reducing the transpiration efficiency in any plant.

Claim 12 is directed to a method of increasing transpiration efficiency in a plant comprising introducing an ERECTA gene or an allelic variant thereof in said plant.

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Claim 13 is directed to a method of increasing transpiration efficiency in a plant comprising introducing SEQ ID NO: 1 encoding SEQ ID NO: 2. Specification provides guidance on increasing transpiration efficiency comprising transforming a plant with SEQ ID NO: 1 encoding SEQ ID NO: 2. But specification does not provide guidance on increasing transpiration efficiency comprising expressing any ERECTA gene or an allelic variant thereof in any manner other than transforming a plant with SEQ ID NO: 1. The specification does not provide guidance on co-factors, or positive regulators of ERECTA gene for example that makes the ERECTA gene to overexpress to produce a plant with increased transpiration efficiency. The specification provides no guidance on up-stream regulatory factors, for example, that may be necessary in stimulating the overexpression endogenous ERECTA gene or an allelic variant thereof. Undue experimentation would have been required by a skilled artisan to determine how a plant with increased transpiration efficiency can be produced by a method that comprises overexpression of ERECTA gene or an allelic variant thereof without transforming the plant with a polynucleotide encoding the polypeptide of SEQ ID NO: 2.

Given the breadth of the claims, unpredictability of the art and lack of guidance of the specification, as discussed above, undue experimentation would be required by one skilled in the art to make and use the claimed invention. Therefore, it is maintained that the claimed invention is not enabled as commensurate in scope with the claims.

11. Claims 12-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

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one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are broadly drawn to a method of modulating the transpiration efficiency of a plant comprising introducing an isolated ERECTA gene or an allelic variant thereof or the protein coding region thereof into a plant and selecting a plant having a different transpiration efficiency compared to a near-isogenic plant that does not comprise the introduced ERECTA gene or allelic variant or protein-encoding region, or wherein the introduction is through introgression.

Specification describes isolation of a nucleotide sequence (SEQ ID NO: 1) encoding ERECTA protein (SEQ ID NO: 2) of *Arabidopsis*. The specification further describes functional complementation of an *Arabidopsis* mutant comprising defective ERECTA gene by transforming said mutant with a plant transformation vector comprising SEQ ID NO: 1. Normal transpiration efficiency was restored in the transformed plants. See pages 74-77, example 8.

Claim 12 is directed to a method of increasing the transpiration efficiency of a plant using any ERECTA gene or an allelic variant of ERECTA gene. Claim 13 is directed to an ERECTA gene or allelic variant comprising a nucleotide sequence which has at least about 55% sequence identity to SEQ ID NO: 1 or encodes a protein which has at least 55% sequence identity to SEQ ID NO: 2. The specification does not have adequate written description for the genus of ERECTA genes genus of allelic variants of ERECTA genes, genus of sequences that are not 100% identical to SEQ ID NO: 1 and genus of sequences that are not 100% identical to SEQ ID NO: 2 under current written description guidelines. Specification does not describe these sequences and one

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skilled in the art cannot reliably predict the structure of these undisclosed sequences based upon the disclosure of SEQ ID NOs: 1 and 2.

Applicants have failed to describe the undisclosed structures of their broadly claimed genus. The specification does not describe for example, domains within SEQ ID NOs: 1 or 2 that are essential for its functional activity and which would be shared by all the species of Applicant's broadly claimed genus. Further, Applicants have failed to correlate said structures to the function of increased transpiration efficiency when introduced and expressed in a plant. Thus, it clearly implies that Applicants have failed to reduce their broadly claimed genus to practice.

Accordingly, there is lack of adequate description to inform a skilled artisan that applicant was in possession of the claimed invention at the time of filing. See Written Description guidelines published in Federal Register/Vol.66, No. 4/Friday, January 5, 2001/Notices; p. 1099-1111.

Given the claim breadth and lack of guidance as discussed above, the specification does not provide written description of the genus broadly claimed. Accordingly, one skilled in the art would not have recognized Applicants to have been in possession of the claimed invention at the time of filing.

Claim Rejections - 35 USC § 102 & 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mitsukawa et al. (Japanese Patent Publication No. JP 09056382 A, Published March 4, 1997, translation enclosed) and evidenced by Masle et al. (Nature, 436:866-870, 2005).

Mitsukawa et al. disclose a transgenic plant and a method of producing said transgenic plant comprising introducing and expressing a nucleotide sequence encoding the protein of accession No. AAW13408, which has 100% sequence identity to instant SEQ ID NO: 2, or wherein said transgenic plant is *Arabidopsis*. See claims 1-6; paragraphs 0001-0055. The property of increasing the transpiration efficiency of a plant is inherent to the method of making said transgenic plant disclosed in the reference. The inherent property of increased transpiration efficiency is further evidenced by Masle et al. who disclose ERECTA gene encoding a protein having 100% sequence identity to instant SEQ ID NO: 2, and wherein expression of said gene in a transgenic plant results in increased transpiration efficiency (see page 436, abstract, figure 1; page 867, figure 2; page 436, figures 3-4). See MPEP 2111.02. Also see *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1346-48, 64 USPQ2d 1202, 1204-05 (Fed. Cir. 2002) where a claim at issue was directed to a method of preparing a food rich in glucosinolates wherein cruciferous sprouts are harvested prior to the 2-leaf stage. The

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court held that the preamble phrase "rich in glucosinolates" helps define the claimed invention, as evidenced by the specification and prosecution history, and thus is a limitation of the claim (although the claim was anticipated by prior art that produced sprouts inherently "rich in glucosinolates"). Furthermore, see *Integra LifeSciences Ltd. v. Merck KGaA* 50 USPQ2d 1846, 1850 (DC Scalif 1999), which teaches that where the prior art teaches all of the required steps to practice the claimed method and no additional manipulation is required to produce the claimed result, then prior art anticipates the claimed invention.

The instantly claimed invention encompasses a method step comprising selecting for a transgenic plant with increased transpiration efficiency phenotype compared to an untransformed plant. Neither the specification nor the prior art suggests that transgenic plant population expressing a polynucleotide encoding instant SEQ ID NO: 2 results in a significant proportion of transgenic plants which do not exhibit an increased transpiration efficiency phenotype. It would have been obvious to one of ordinary skill in the art to select for transgenic plant with increased transpiration efficiency (inherently associated property of polynucleotide sequence taught in the reference) because selection of a transgenic plant with a phenotype would have been the ultimate useful goal without any surprising or unexpected results.

Conclusions

12. No claims are allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinod Kumar whose telephone number is (571) 272-4445. The examiner can normally be reached on 8.30 a.m. to 5.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DAVID H. KRUSE, PH.D.
PRIMARY EXAMINER

